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 WMAP Cosmological Parameters

 Model:  $\Lambda$ cdm+mnu

Data: wmap9+snls3

|                                |                                     |                           |  |
|--------------------------------|-------------------------------------|---------------------------|--|
| $10^9 \Delta_{\mathcal{R}}^2$  | $2.364 \pm 0.094$                   | $H_0$                     | $69.6 \pm 2.3 \text{ km/s/Mpc}$                    |
| $\ell(\ell + 1)C_{220}/(2\pi)$ | $5757^{+35}_{-34} \mu\text{K}^2$    | $d_A(z_{\text{eq}})$      | $14251^{+111}_{-110} \text{ Mpc}$                  |
| $d_A(z_*)$                     | $14087 \pm 112 \text{ Mpc}$         | $D_v(z = 0.57)/r_s(z_d)$  | $13.28^{+0.31}_{-0.30}$                            |
| $\eta$                         | $(6.22 \pm 0.13) \times 10^{-10}$   | $k_{\text{eq}}$           | $0.00974 \pm 0.00028$                              |
| $\ell_{\text{eq}}$             | $137.2 \pm 3.0$                     | $\ell_*$                  | $302.17 \pm 0.64$                                  |
| $\sum m_\nu$                   | $< 0.52 \text{ eV (95\% CL)}$       | $n_b$                     | $(2.555 \pm 0.055) \times 10^{-7} \text{ cm}^{-3}$ |
| $n_s$                          | $0.977 \pm 0.012$                   | $\Omega_b$                | $0.0470 \pm 0.0027$                                |
| $\Omega_b h^2$                 | $0.02275 \pm 0.00049$               | $\Omega_c$                | $0.229 \pm 0.021$                                  |
| $\Omega_c h^2$                 | $0.1107 \pm 0.0039$                 | $\Omega_\Lambda$          | $0.719 \pm 0.025$                                  |
| $\Omega_m$                     | $0.281 \pm 0.025$                   | $\Omega_m h^2$            | $0.1356 \pm 0.0040$                                |
| $\Omega_\nu h^2$               | $< 0.0055 \text{ (95\% CL)}$        | $r_s(z_d)$                | $153.0 \pm 1.2 \text{ Mpc}$                        |
| $r_s(z_d)/D_v(z = 0.106)$      | $0.346 \pm 0.012$                   | $r_s(z_d)/D_v(z = 0.2)$   | $0.1888 \pm 0.0059$                                |
| $r_s(z_d)/D_v(z = 0.35)$       | $0.1134 \pm 0.0031$                 | $r_s(z_d)/D_v(z = 0.44)$  | $0.0931 \pm 0.0024$                                |
| $r_s(z_d)/D_v(z = 0.54)$       | $0.0786 \pm 0.0019$                 | $r_s(z_d)/D_v(z = 0.57)$  | $0.0753 \pm 0.0017$                                |
| $r_s(z_d)/D_v(z = 0.6)$        | $0.0723 \pm 0.0016$                 | $r_s(z_d)/D_v(z = 0.73)$  | $0.0623 \pm 0.0012$                                |
| $r_s(z_*)$                     | $146.5 \pm 1.1$                     | $R$                       | $1.730 \pm 0.016$                                  |
| $\sigma_8$                     | $0.765^{+0.042}_{-0.044}$           | $\sigma_8 \Omega_m^{0.5}$ | $0.405 \pm 0.026$                                  |
| $\sigma_8 \Omega_m^{0.6}$      | $0.357 \pm 0.025$                   | $\alpha_{\text{SNLS}}$    | $1.43 \pm 0.11$                                    |
| $\beta_{\text{SNLS}}$          | $3.26 \pm 0.11$                     | $A_{\text{SZ}}$           | $< 2.0 \text{ (95\% CL)}$                          |
| $t_0$                          | $13.80 \pm 0.14 \text{ Gyr}$        | $\tau$                    | $0.092 \pm 0.014$                                  |
| $\theta_*$                     | $0.010397 \pm 0.000022$             | $\theta_*$                | $0.5957 \pm 0.0013^\circ$                          |
| $\tau_{\text{rec}}$            | $285.5 \pm 2.1$                     | $t_{\text{reion}}$        | $444 \pm 63 \text{ Myr}$                           |
| $t_*$                          | $378974^{+3576}_{-3586} \text{ yr}$ | $z_d$                     | $1020.7 \pm 1.1$                                   |
| $z_{\text{eq}}$                | $3195 \pm 91$                       | $z_{\text{rec}}$          | $1087.86^{+0.73}_{-0.74}$                          |
| $z_{\text{reion}}$             | $10.8 \pm 1.1$                      | $z_*$                     | $1090.55^{+0.77}_{-0.76}$                          |

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